

Thyristor-Diode Module, 50 Amps

Features

- Improved glass passivation for high reliability
- Exceptional stability at high temperatures
- High di/dt and dv/dt capabilities
- Low thermal resistance



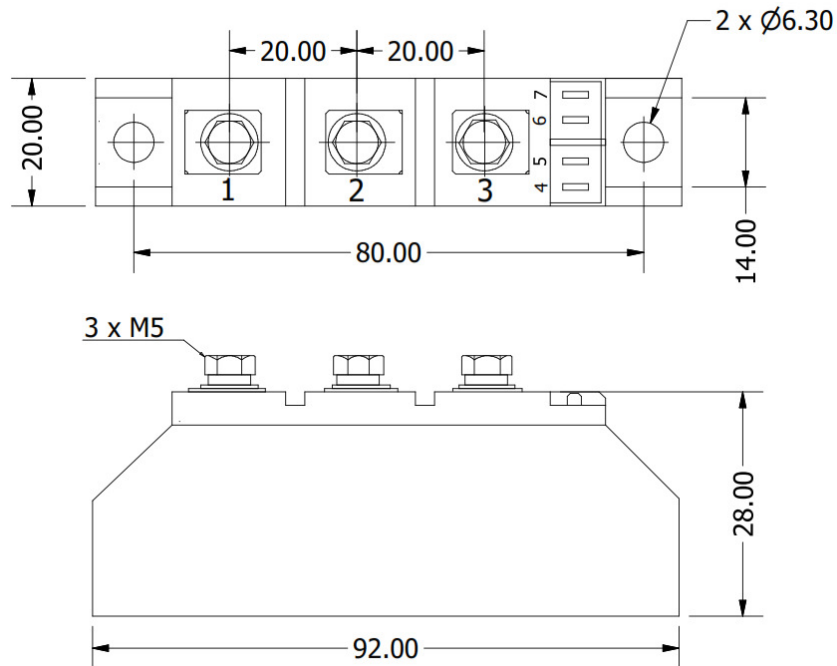
| Voltage Ratings ($T_A = 25^\circ\text{C}$, unless otherwise noted) | | | | | |
|--|--------------|--|--|--|--|
| Type number | Voltage Code | V_{RRM} , Maximum repetitive peak reverse voltage (V) | V_{RSM} , Maximum non-repetitive peak reverse voltage (V) | V_{DRM} , Maximum repetitive peak off-state voltage (V) | I_{RRM} , Maximum reverse leakage current @ T_{JMAX} (mA) |
| NTD57 | 60 | 600 | 700 | 600 | max. 10 |
| | 80 | 800 | 900 | 800 | |
| | 100 | 1000 | 1100 | 1000 | |
| | 120 | 1200 | 1300 | 1200 | |
| | 140 | 1400 | 1500 | 1400 | |
| | 160 | 1600 | 1700 | 1600 | |
| | 180 | 1800 | 1900 | 1800 | |

| Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | |
|---|--------------|-----------|------------------------|
| Parameter | Symbol | Values | Units |
| Maximum average forward current @ $T_J = 85^\circ\text{C}$ | $I_{T(AV)}$ | 50 | A |
| Maximum average RMS forward current | $I_{T(RMS)}$ | 79 | A |
| Maximum non-repetitive surge current | I_{TSM} | 1500 | A |
| Maximum I^2t for fusing | I^2t | 11250 | A^2s |
| Forward voltage drop | V_{TM} | max. 1.6 | V |
| Critical rate of rise of on-state current | di/dt | max. 150 | $\text{A}/\mu\text{s}$ |
| Critical rate of rise of off-state voltage | dv/dt | max. 1000 | $\text{V}/\mu\text{s}$ |
| Gate current required to trigger | I_{GT} | min. 150 | mA |
| Gate voltage required to trigger | V_{GT} | min. 3 | V |
| Maximum holding current | I_H | 150 | mA |
| Maximum latching current | I_L | 300 | mA |
| Isolation voltage | V_{ISO} | 3000 | V |

| Thermal & Mechanical Specifications ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | |
|--|--------------|--------------|---------------------------|
| Parameter | Symbol | Values | Units |
| Operating junction temperature range | T_J | -40 to +125 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -40 to +125 | $^\circ\text{C}$ |
| Thermal resistance, junction to case | $R_{th(jc)}$ | 0.57 | $^\circ\text{C}/\text{W}$ |
| Mounting torque | to heatsink | $5 \pm 15\%$ | Nm |
| | to terminals | $3 \pm 15\%$ | |
| Weight | W | 100 | g |

Package Outline

(All dimensions in mm)



Circuit Configuration

| Circuit Description | Configuration Code | Circuit Drawing |
|-------------------------------------|--------------------|--|
| Series Connection (doubler circuit) | N | <p>The circuit diagram shows two diodes connected in series. The first diode has its anode connected to terminal 1 and its cathode to terminal 2. The second diode has its anode connected to terminal 2 and its cathode to terminal 3. Terminal 4 is connected to ground (G), terminal 5 is connected to the cathode of the second diode, and terminal 6 is connected to the anode of the first diode.</p> |
| Common Anode | A | <p>The circuit diagram shows two diodes connected in a common anode configuration. The anodes of both diodes are connected to terminal 2. The cathode of the first diode is connected to terminal 1, and the cathode of the second diode is connected to terminal 3. Terminal 4 is connected to ground (G), terminal 5 is connected to the cathode of the second diode, and terminal 6 is connected to the anode of the first diode.</p> |



Ordering Table

| <i>NTD</i> | <i>57</i> | <i>N</i> | <i>160</i> |
|------------|-----------|----------|------------|
| 1 | 2 | 3 | 4 |

1 – Power Module

- > DD = Diode-Diode
- > TD = Thyristor-Diode
- > TT = Thyristor-Thyristor

2 – Current Rating = $I_{T(AV)}$

3 – Circuit Configuration (see Table)

4 – Voltage Code (see Voltage Ratings table)